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ABSTRACT

Most studies of child and adolescent personality have identified three main types (resilients, overcontrollers, and undercontrollers) and further subtypes using Q sort methodology. This study investigated the generalizability of a personality typology by using cluster analysis on the Big-Five scale with adolescents between 12 and 16 years of age. The goals were to: (1) demonstrate the same three personality types in terms of their configuration of scores on the Big-Five personality dimensions; (2) demonstrate subtypes within each of the resilient, undercontrolled and overcontrolled adolescent boys; and (3) validate the types and subtypes with self-reports on perceived relational support, adjustment, delinquency, substance use, and bullying. Participating were 3,284, 12- to 18-year-olds in the Netherlands. Data were obtained through questionnaires and sociometric techniques. The findings indicated that the Big-Five personality measure was able to replicate the three personality types of Overcontrollers, Undercontrollers, and Resilients found in earlier studies. Using a cluster analysis, all participants were classified. The subtypes of Impulsive and Antisocial, Undercontrolled, and Communal and Agentic Resilient adolescents were also identified. Adolescents representing specific personality types and subtypes revealed distinct configurations of adaptation in their self-descriptions of problem behaviors, addictive behaviors, and in peer evaluations of acceptance, rejection, and reputation. (Contains 20 references.) (KB)

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In a number of recent studies on personality, comparable personality types were distinguished, as well in samples of adults as in samples of children and adolescents (cf. Caspi, in press). These earlier person-centered studies of personality in children and adolescents were based on the use of one single assessment method, i.e., the California Child Q-set (Block & Block, 1980). With a single exception (van Lieshout, Haselager, Riksen-Walraven, & van Aken, 1995), personality types were based on Q-factor analysis of 54 to 100 items describing a wide range of behavior and personality characteristics in the Q-set. Personality descriptions were given by adult observers of the children and adolescents, i.e., parents (Robins, John, Caspi, & Moffitt, 1996) or teachers (Asendorpf & van Aken, submitted), while in other studies personality descriptions by trained examiners were based on clinical archives (Block, 1971) or interviewers notes (Hart, Hofmann, Edelstein, & Keller, 1997).

In most studies on children and adolescents three main types, were distinguished, i.e., resilients, overcontrollers, and undercontrollers. In one study (Robins et al., in press), two of these three types (i.e., Resilients and Undercontrollers) could be further distinguished into two subtypes each, i.e., Communal and Agentic Resilients and Impulsive and Antisocial Undercontrollers, respectively. Van Lieshout , Haselager, Riksen-Walraven, and van Aken (1995) distinguished in a single cluster analysis on their sample a natural taxon with two subclusters in each of the three primary personality clusters. Most earlier studies were limited to rather small or specific samples, e.g., only boys (Hart et al., 1997; Robins et al., 1996). The study we present here was based on a large Dutch representative sample of several thousand male and female adolescents.

In the study we present today, we investigated the generalizability of the personality typology and subtypology by using cluster analysis -- and not inverse or Q-factor analysis --, on a different assessment instrument, i.e., scores on Big-Five scales derived from 25 bipolar

likert-type self-ratings instead of using CCQ-descriptions, where adolescents between 12 and 16 years-of-age had described themselves in self-reports instead of being described by adults. A few years ago, York & John (1992) "ruled out cluster analysis as an empirical means of identifying typological categories because clustering assigns each individual exclusively to one category" (p. 495). Instead they propagated inverse (Q) factor analysis, because each factor is defined by loadings from each subject and the loadings of an individual on each Q-factor index the degree to which an individual's particular personality configuration captures the personality prototype represented by each factor. In this study we argue that the configuration of the mean scores of the variables entered in a cluster analysis for each resulting cluster also represent as many personality prototypes as there are clusters. The configuration of an individual's scores on the same variables that are entered in the cluster analysis can be compared or correlated with the mean scores for each cluster and lead to as many prototypical personality scores as there are clusters. Inverse or Q-factor analysis also has disadvantages. Some persons have high loadings on more than one factor and others have low loadings on all clusters; such individuals are hard to classify. The use of further statistical means, such as discriminant analysis, for further classification of individuals into a particular personality type, also leave a number of participants in each study who cannot be assigned to a particular personality type (cf. Hart et al., 1997; Robins et al., 1996; York & John, 1992). In contrast, clustering assigns each individual exclusively to one category, offering the option to assess the degree to which an individual resembles the prototypical configuration of the other types. In our view, personality typology is more generalizable, if all participants in a study, with no exception, can be assigned to a particular personality type and when assignment of individuals to personality types is not exclusively limited to one single statistical procedure.

The first aim of our study was to demonstrate the same three personality types, i.e., Overcontrollers, Undercontrollers, and Resilients, as assessed in earlier studies in terms of their configuration of scores on the Big-Five personality dimensions and compare these configurations with those found in other studies, i.e., Robins et al.(1996) and van Lieshout et al. (1995). These latter studies were based on Block & Block's (1980) model for the

psychological functioning of personality. Because we had no data on ego-resilience and ego-control in our sample, though, we could not distinguish our types and subtypes in terms of those two personality dimensions. We argue, however, that even stronger support for Block and Block's model can be derived from the results of a study wherein Block and Block's assessment instruments are not used, where a comparison with their two personality dimensions cannot be made, and wherein different statistical procedures were used to search for personality types and subtypes. Considering Jack Block's (1995) critical attitude towards the Big-Five Model of personality, the strongest support for his personality model would come from a study that was completely designed from a Big-Five point of departure.

Our second aim was to demonstrate subtypes within each of the two main types of resilient and undercontrolled adolescent boys as were found in earlier studies, but, in addition, to demonstrate subtypes in the main type of overcontrolled adolescents and to compare these results with those of earlier studies, i.e., Robins et al. (in press) and van Lieshout et al. (1995).

Our third aim was to validate our types and subtypes in terms of self-report data on adolescents' perceived relational support from their father, mother, most special sibling and their best friend as wel as self-report data on their adjustment, i.e., several aspects of psychological well-being (such as self-esteem, loneliness, brooding, worrying about home, and psychosomatic complaints); aspects of delinquency in terms of Loeber and Hay (1994) overt delinquency, covert delinquency, and conflict with authority; use of substances such as smoking cigarettes, alcohol consumption, drug use, and gambling; and involvement in bullying as a perpetrator and as a victim of direct or indirect bullying. In order to avoid that our personality assessment and validation would be completely based on self-ratings we further validated our types and subtypes with two types of peer nominations, that is, the peer attraction measures of peer acceptance and peer rejection, and five factors of peer reputation that were also based on nominations by classmates, i.e., Aggression-Inattentiveness, Achievement-Withdrawal, Self-Confidence, Sociability, and Emotionality-Nervousness (Scholte et al., 1997).

Method

Participants

Participants were 3284 students (1402 girls, 1882 boys) attending 149 first- to fifth-grade secondary school classes in the Arnhem-Nijmegen region in The Netherlands. The age of the students ranged from 12 years to 18 years (M = 14.5 years, SD = 9 months). Five per cent of the students considered themselves minorities (1.5% came from Surinam, the Netherlands Antilles, or the Molucca Islands; 2% from Mediterranean countries; and 1.5% from other countries).

Measures

Big Five personality self-descriptions. A self-report questionnaire consisting of 25 bipolar items was used to assess the Big Five personality factors. Subjects were asked to rate on a 7-point scale, ranging from (1) Pole A very true to (7) Pole B very true , with (4) Pole A and Pole B a little bit true in between, how each item held for them. Exploratory and confirmatory factor analyses indeed revealed the Big Five personality factors (Scholte et al., 1997). The Cronbach's alpha reliabilities were .78, .75, .60, .75, and .57 for Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness/Intellect, respectively.

Perceived relational support. A 27-item self-report questionnaire was used to measure adolescents' relational support perceived from mothers, fathers, special siblings, and best friends. The subjects were asked to indicate on a 5-point scale ranging from very true (1) to very untrue (5) with sometimes true, sometimes untrue (3) in between how much each of the 27 items held for the following persons: mother, father, special sibling, and best friend. "Your best friend" was described as "a person who, in turn, would nominate you as one of his or her best friends". Romantic partners were not considered best friends. The items were empirically found to represent five perceived relational support factors (Scholte et al., submitted). These dimensions were Parental Support ("my mother/father shows me that she/he loves me", a = .91), Friend Support ("my friend shows me that she/he loves me", a = .83), Convergence of Goals ("this person and I have the same opinions about the use of drugs, alcohol, or

gambling", a= .87), Sibling Support ("my sister/brother shows me that she/he loves me", a = .85), and Respect for Autonomy ("this person lets me decide as often as possible", a = .79).

Psychological Well-being consisted of five subscales: Self-esteem (e.g., "In most things I am as good as other people", a = .66), loneliness (e.g., "I often feel lonely", a = .46), brooding (e.g., "How often do you brood about your school performances", a = .72), worry about home (e.g., "How often do you feel sad about your parents", a = .56), and somatic complaints (e.g., "How often did you suffer from a headache", a = .76).

Delinquency consisted of the subscales overt and covert delinquency, and conflict with authority (cf. Loeber, 1993). Covert delinquency (a = .90) concerned such behaviors as running away from home, or staying away without parental permission. Overt delinquency (a = .83) concerned violence and getting into fights; conflict with authority (a = .65) concerned items like quarrelling with parents or teachers.

Addictive Behaviors were assessed using four items related to substance use and gambling, i.e., cigarette smoking ("How many cigarettes did you smoke per day over the past month"), alcohol use ("How many glasses of alcohol did you drink over the past month"), drug use ("How often did you use soft drugs like marihuana over the past 12 months"), and gambling ("How often did you play cards for money over the past month").

Bullying. To assess involvement in bullying, we used three scales of the Bully/Victim self-report Questionnaire (Olweus, 1991): 1) victim of indirect bullying (4 items, a = .63), to indicate feelings of isolation from the group, 2) victim of direct bullying (5 items, a = .77), and 3) bullying others (5 items, a = .82), to indicate how much a person actively participated in bullying others. Per scale, 4- and 5-point Likert scale item scores were transformed into z-scores and averaged.

Sociometric status. Participants were asked to nominate three to five classmates who they liked most (peer acceptance) and three to five classmates who they liked least (peer rejection). The like-most and like-least scores for each subject were computed by tallying the number of nominations received and transforming these scores into p-scores.

Peer-group reputation. Peer-group reputation was based on 20 "Guess who" peer nomination items (Thompson, 1960). The 20 items concerned attributes of an individual's peer-group functioning. Per item, the students had to nominate three to five classmates (see Scholte et al., 1997, for a description of the items). For each subject all of the nominations received from all nominating classmates on that item were summed and transformed per class into probability scores (p-scores) to correct for unequal numbers of nominating students per class. In our earlier study (Scholte et al., 1997), factor analyses on the 20 items revealed five replicable peer-group reputation factors: Aggression-Unattentiveness (e.g., being perceived as quarrelsome, lazy, absent-minded, irritable), Achievement-Withdrawal (e.g., being perceived as persistent, hard working, shy, reserved, withdrawn), Self-Confidence (e.g., being perceived as sensible, secure, steady, sincere), Sociability (e.g., being perceived as enthusiastic, considerate, intelligent), and Emotionality-Nervousness (e.g., being perceived as emotional, anxious, nervous, uncreative). The Cronbach's alpha reliabilities for the scales based on these factors were .75, .72, .70, .66, and .55, respectively.

Procedure

Trained research assistants administered all of the measures in each classroom during regular class hours. All of the classes were visited in the autumn and winter of 1994. Students participated on a voluntary basis; one student refused to participate. Class group testing sessions, during approximately one and a half hours, were used to obtain self-reports and peer nominations. Participants were presented a list with the names of all the students in their class, each name followed by a code number, to use as a reference in making the peer nominations. They were instructed to nominate three to five classmates on each of the peer nomination items. To ensure nomination of those peers best fitting each of the items, cross-sex nominations as well as nominations of classmates not present during the assessment were allowed. Self-nominations were not allowed. Students participated on a voluntary basis; one student refused to participate. Information about the procedures and the instructions were read aloud. Students' questions were answered whether before, during, or after administration. If the teachers remained in the classroom, they were requested not to interfere with the procedure.

Results

Do we Find the Three Main Types?

To investigate whether a typology in adolescents' self-descriptions could be distinguished, cluster analysis on the five personality dimensions was carried out. This cluster analysis was accomplished in two steps. First, the same cluster analyses were performed on a number of randomly selected independent halves of the total sample, yielding three clusters that were similar in terms of the scores on the five personality dimensions. Second, on the basis of these cluster analyses, initial cluster centers, which were obtained by Ward's method, were specified for each variable. These initial centers were then used to classify each adolescent in the sample to a cluster, using the SPSS-X procedure QUICK CLUSTER. Three types of adolescents that differed in the configuration of their big five scores were found. These configurations of big five scores were very similar to the configurations found in other studies. For reasons of comparison we have presented our findings and those of Robins et al. in a single figure (see Figure 1).

Figure 1 about here

Our Type 1 revealed the pattern of Robins et als. Overcontrollers; they scored lowest on Extraversion, intermediate on Agreeableness and Conscientiousness, and lowest on Emotional Stability and Openness. Our Type 2 was very similar to Robins et als. (1996) Undercontrollers; they scored high on Extraversion, lowest on Agreeableness and Conscientiousness, and intermediate on Emotional Stability and Openness. It should be noted that the Big-Five profiles of Overcontrollers and Undercontrollers are mutually complimentary: mean scores of the Big-Five dimensions of each of these types are mirrored along an imaginary axis of the mean scores of the two types. This mirroring effect is consistent with the contrast between over- and undercontrol as manifestations of Block and Block's (1980) ideas about impulse control. The Big-Five configuration of our Type 3, finally, was very concordant with Robins et als. (1996) Resilient type; they scored high on all five personality dimensions. Also the numbers of boys

and girls were significantly different for our three types (Chi square = 109.74, d.f. = 2, $p < .001$) and were consistent with gender differences in personality types. Overcontrollers comprised 41.3% of the total sample (n = 1356; 705 girls and 651 boys) and were relatively more often girls; Undercontrollers comprised 22.8% (n = 750; 215 girls and 535 boys) and were significantly more often boys; the 35.9% Resilient adolescents (n = 1178; 482 girls and 696 boys) were equally often girls and boys.

Next we have contrasted the three types of this study with the types found in our earlier study (van Lieshout et al., 1995). This earlier study concerned a small sample of 79 boys and girls studied at the three ages of 7, 10, and 12 years of age across therielementary school years. Personality descriptions were given by teachers using the California Child Q-set. Cluster analyses were based on the CCQ Big-Five dimensions at each of the three investgated ages. Graphs of the results of this study were remarkably similar as the ones in Figure 1. Now we have presented the results of the comparison in Table 1.

Table 1 about here

Table 1 presents the Spearman rank intercorrelations between the Big-Five profiles of the present study and our earlier study. In the first place, the results show that all three corresponding profiles are highly similar (see coefficients on the diagonal in italics). Second,the profiles of Overcontrollers and Undercontrollers in both studies are as highly negatively intercorrelated, indicating that in both studies Under- and Overcontrollers are each others counterparts. Because the corresponding profiles of the three types in our earlier study were related with ego-resilience and ego-controle, we consider the findings of our present study as strong support for Block & Block's (1980) two-dimensional model of personality functioning.

These results led us to the conclusion that we found three personality types that were very similar as in other studies.

What Sybtypes Do We Find in Each of the Main Types

Using Q-cluster analysis, for each of the three main types we now computed 2-cluster solutions again on the big five personality factors. For this paper, we computed the 2-subcluster solutions because in earlier studies (Robins et al., in press; van Lieshout et al., 1995) within each of the three main types two subtypes were specified .

Overcontrollers. In the earlier study of Robins et al. (in press) no replicable subtypes were found in the group of Overcontrollers.

Figure 2 about here

As can be seen in Figure 2, both subclusters of Overcontrollers did not differ on Extraversion and Agreeableness, but they were significantly different on Conscientiousness, Emotional Stability and Openness. Adolescents of Subtype 1, compared to all other adolescents scored especially low on Emotional Stability, Conscientiousness, and Openness and were dubbed Vulnerable Overcontrollers (cf. Block, 1971). Compared to Subtype 1, adolescents of Subtype 2 scored relatively high on Conscientiousness, Emotional Stability and Openness and were called Achievement-oriented Overcontrollers. Two-third of the Vulnerable Overcontrollers were girls while the Achievement-oriented Overcontrollers were equally often boys and girls (Chi square on gender differences was xxx, d.f. = 1, $p < .xxx$)

Undercontrollers. The two-subcluster solution split the Undercontrollers in two large subgroups (see Figure 3).

Figure 3 about here

Subcluster 1 were more Extraverted and Agreeable and less Conscientious, Emotionally Stable, and Open. Nearly two third of this subcluster were boys. Adolescents of this subtype were dubbed Impulsive Undercontrollers. The second subtype scored relatively low on Extraversion, very low on Agreeableness, but higher than the first subtype on Conscientiousness, Emotional

Stability, and Openness. The majority of this subcluster (85%) were boys. The adolescents in this subtype were called Antisocial Undercontrollers.

Resilients. The two-subcluster solution also split the Resilients in two large subgroups (see Figure 4).

Figure 4 about here

The first subtype scored relatively low on Extraversion, somewhat higher on Agreeableness and Conscientiousness, much lower on Emotional Stability and lower on Openness; 60% were girls. Following Robins et al. (in press), they were called Communal Resilients. Compared to all adolescents, the second subtype scored highest on Extraversion, Emotional Stability, and Openness; 73% of this subtype were boys. This subtype of resilient adolescents were called Agentic Resilients. Robins et al. cite McAdams (1993) and refer to Bakan (1966) for the description of agency and communion: "Agency refers to the individual's striving to separate from others, to master the environment, to assert, protect, and expand the self... Communion refers to the individual's striving to lose his or her own individuality by merging with others, participating in something that is larger than the self, and relating to other selves in warm, close, intimate, and loving ways".

Again we have compared the subtypes of this study with the subtypes of our earlier study by intercorrelating the six Big-Five personality profiles of the two studies (see Table 2).

Table 2 about here

Except for the achievement-oriented overcontrollers, the correlations of the corresponding Big-Five profiles of the subtypes are not significantly correlated (see coefficients in italics on the diagonal). The other significant intercorrelations are understandable from the descriptions of the subtypes, but do not offer strong support for discriminant validity of the subtypes.

For the time being we conclude that in Undercontrolled and Resilient adolescents subtypes can be found that reveal some similarity with subtypes in Robins et als. study. Moreover, in our study two subtypes of Overcontrollers could be distinguished.

Can We Validate our Types and Subtypes in Adolescents' Self-reports and Peer Reports?

Three main types. In ANOVAs we compared the three types on several sets of variables assessing adolescent adjustment and subsequently compared mean differences among pairs of types (see Table 3).

Table 3 about here

Please, note the structure of this table, because we will show a number of them with the same format. The top panel of the Table concerned self-reports of experienced relational support, psychological well-being, delinquency, substance use, and involvement in bullying; the bottom panel compared peer evaluations by adolescents' classmates, first on peer like and dislike, and on five dimensions of peer reputation. Please note also, that all variables are standardized across the whole sample. Therefore, for such standardized variables scores around zero represent sample mean scores.

Self-reports. Resilients scored highest on all aspects of experienced support, i.e., parental support, friend support, convergence versus opposition of goals with all persons in their network, sibling support, and experienced respect for autonomy. Overcontrollers and Undercontrollers did not significantly differ, except for convergence of goals, where Undercontrollers scored lowest. On several aspects of psychological well-being, Overcontrollers scored lowest and Resilients scored highest in most instances. Undercontrollers reported highest levels of three dimensions of delinquency as well as on all means of substance use and gambling, while Overcontrollers scored significantly lowest on overt delinquency. Undercontrollers were most often perpetrators of bullying, while Overcontrollers were most often, and Resilients were least often victims of direct and indirect bullying.

Peer reports. Overcontrollers were less liked and more often had a neglected sociometric status; Undercontrollers were most disliked and had more often a rejected or controversial sociometric status. Resilients more often held a popular sociometric status. In the view of their classmates, Overcontrollers had lowest self-confidence and sociability,and highest emotionality and nervousness. Undercontrollers were significantly more Aggressive-Unattentive and lowest Achieving-Withdrawn. Resilients scored intermediate on Aggression-Unattentiveness and Achievement-Withdrawn, but relatively high on Self-confidence and Sociability and relatively low on Emotionality-Nervousness.

Vulnerable and Achievement-oriented Overcontrollers.

Table 4 about here

In Table 4 we report mean differences (t-tests for independent samples) between the Vulnerable versus Achievement-oriented Overcontrollers on the standard scores derived from the whole sample. Note that the format and the dependent variables of Table 4 are the same as in Table 3. Compared to Achievement-oriented Overcontrollers, Vulnerable Overcontrollers report lower perceived relational support on all five dimensions; lower scores on all aspects of psychological well-being; lower on all aspects of delinquency; they smoke fewer cigarettes and use less drugs; and are more often victims of direct and indirect bullying. Compared to the overall sample the Achievement-oriented Overcontrollers score on most self-report variables around the sample mean.

Vulnerable Overcontrollers are overrepresented in the rejected sociometric status group. In terms of Cillessen, van IJzendoorn, van Lieshout, and Hartup, (1992) they are presumably more often withdrawn-rejected adolescents who run a higher risk to be victimized. On the peer reputation dimensions, the Achievement-oriented Overcontrollers score lower on Aggression-Unattentiveness and Sociability, but higher on Achievement-Withdrawal.

In sum, Achievement-oriented Overcontrollers are self-contained, hard-working adolescent boys and girls who are average in adjustment on a great number of domains. The Vulnerable

Overcontrollers are more often girls, who reveal a pattern of adjustment tending to internalizing problems.

Impulsive and Antisocial Undercontrollers.

Table 5 about here

In Table 5, again mean differense are reported. Compared to the Antisocial Undercontrollers, the Impulsive Undercontrollers report higher perceived relational support on all five dimensions; less Loneliness, while Antisocial Undercontrollers report less brooding, less worrying about home, and fewer psychosomatic complaints. Both subtypes are not different in all aspects of delinquency and use of substances, except cigarette smoking (i.e., Impulsive Undercontrollers smoke more cigarettes). Antisocial Undercontrollers are more often involved in bullying, as well as perpetrators as victims of direct and indirect bullying. Presumably, they are more often provocative victims (Olweus, 1991). In school classes, Impulsive Undercontrollers are much more liked and less disliked than Antisocial Undercontrollers; the Antisocial Undercontrollers substantially more often are rejected sociometric status types. In their peer reputation, compared to the Impulsive Undercontrollers, the Antisocial Undercontrollers score higher on Achievement-withdrawal and Emotionality-Nervousness, and lower on Self-confident and Sociability.

In sum, the Impulsive Undercontrollers are undercontrollers in the true sense; nearly two-third of them are boys. The Antisocial Undercontrollers are for the most part boys (five out of six) tending to externalizing problems. They are more often rejected by peers.

Communal and Agentic Resilients.

Table 6 about here

In Table 6 we report mean differences for both resilient subtypes. Communal and Agentic resilient adolescents report no differences in perceived relational support, except on

convergence of goals. As might be expected, Communal Resilients score higher on convergence of goals than Agentic Resilients. Both subtypes have an above average to high level of psychological well-being, but there are some significant differences, i.e., Agentic Resilients report higher self-esteem, less brooding, and fewer psychosomatic complaints. Communal Resilients are less often involved in all three types of delinquency and all types of substance use and gambling. They bully less often other adolescents but Agentic Resilients are less often victims of indirect bullying.

The sociometric status of Communal and Agentic Resilients is hardly different; Agentic resilients are somewhat more disliked. In peer reputation, Agentic Resilients are seen as more Aggressive-Unattentive; Communal Resilients score higher on Achievement-Withdrawal, on Sociability, and on Emotionality-Nervousness.

In sum, both subtypes are very well adapted. Communal Resilients are more often girls who behave more adapted and reveal more social and emotional involvement and concerns, while Agentic Resilients are more often boys who present themselves as more autonomous, independent, and more risk-taking, and who are perceived by their classmates also as more autonomous.

Conclusions

In our study, we were clearly able to replicate the three personality types of Overcontrollers, Undercontrollers, and Resilients found in earlier studies. The configuration of scores of each type on the Big-Five personality factors is very similar as in earlier studies (Robins et al., 1996; Van Lieshout et al., 1995), even though our study differed in many respects from the earlier studies. For example, we used a very different instrument for the assessment of personality. We used adolescent self-descriptions on a rather limited number of items, instead of person-descriptions on a comprehensive set of 50 to 100 Q-set-items by adults or expert examiners. We classified all participants in our large-scale representative sample, leaving no unclassifiable individuals out of consideration. Our classification was based on cluster analysis, demonstrating that personality typology is not limited to inverse or Q-factor analysis.

Despite all these differences and despite the orientation of our study on the Big-Five personality model, we found strong support for Block and Block's dimensions of ego-resilience and ego-controle in personality functioning. One of our types represented resilient persons, while the other two types impersonated in their psychosocial functioning the two counterparts of ego-control, i.e., the Undercontrollers and the Overcontrollers. Under- and Overcontrollers were clearly opposites on a single dimension, as well in their patterns of intercorrelation as in their patterns of psychosocial adjustment.

Within each of the main personality types we could identify two subtypes that were similar to the subtypes we identified earlier in a small sample based on big-five personality scales derived from a Dutch version of the California Child Q-set. The subtypes of Impulsive and Antisocial Undercontrolled and Communal and Agentic Resilient adolescents were also very comparable to similar subtypes identified with person-descriptions by mothers among North-American adolescent boys (Robins et al., in press).

The adolescents representing specific personality main types and subtypes revealed very distinct configurations of adaptation, as well in their self-descriptions of externalizing and internalizing problem behaviors and addictive behaviors as in peer evaluations of the adolescents' acceptance and rejection and their reputation in their school classes. Both resilient subtypes represented two very adaptive styles, i.e., more communal and a more agentic style, the first one being more typical for females and the second being more typical for males. Within the types of Over- and Undercontrollers, one subtype represented the extreme pole of control but was clearly adapted while the other subtype represented more maladaptive behavior at the extreme pole of control. Externalizing problems were typical for the Antisocial Undercontrollers and occurred more often in males, while internalizing problems were typical for the Vulnerable Overcontrollers and were more typical for females. These differences in adaptive and maladaptive ego-control at each of the poles of ego-control are very much in line with Block and Block's personality theory.

The comparisons of each type and subtype found in the cluster analysis in this study with convergent and divergent types and subtypes in earlier studies demonstrate how various

configurations of scores of groups of adolescents, i.e., several categories of adolescents representing the personality types and subtypes, can be compared with several prototypical configurations of scores, irrespective whether they are derived from cluster analysis or inverse Q-factor analysis.

In our study, within each main personality type we have explored the characteristics of two subtypes only. Of course, one can distinguish more subclusters than two, especially in such large samples as we have studied (cf. Pulkkinen, 1996). For example, one of the further subclusters of undercontrolled adolescents clearly represented a small subgroup of very aggressive undercontrolled boys. Thereby, an important problem is how many subclusters or personality subtypes one can reliably distinguish.

In this study, we did not investigate developmental changes in personality types across the adolescent years. Several developmental markers for adolescent development, -- such as chronological age, school grade level, cognitive development, pubertal status, and high versus low appreciation of adolescent development, -- all could be related to changes in personality types and subtypes.

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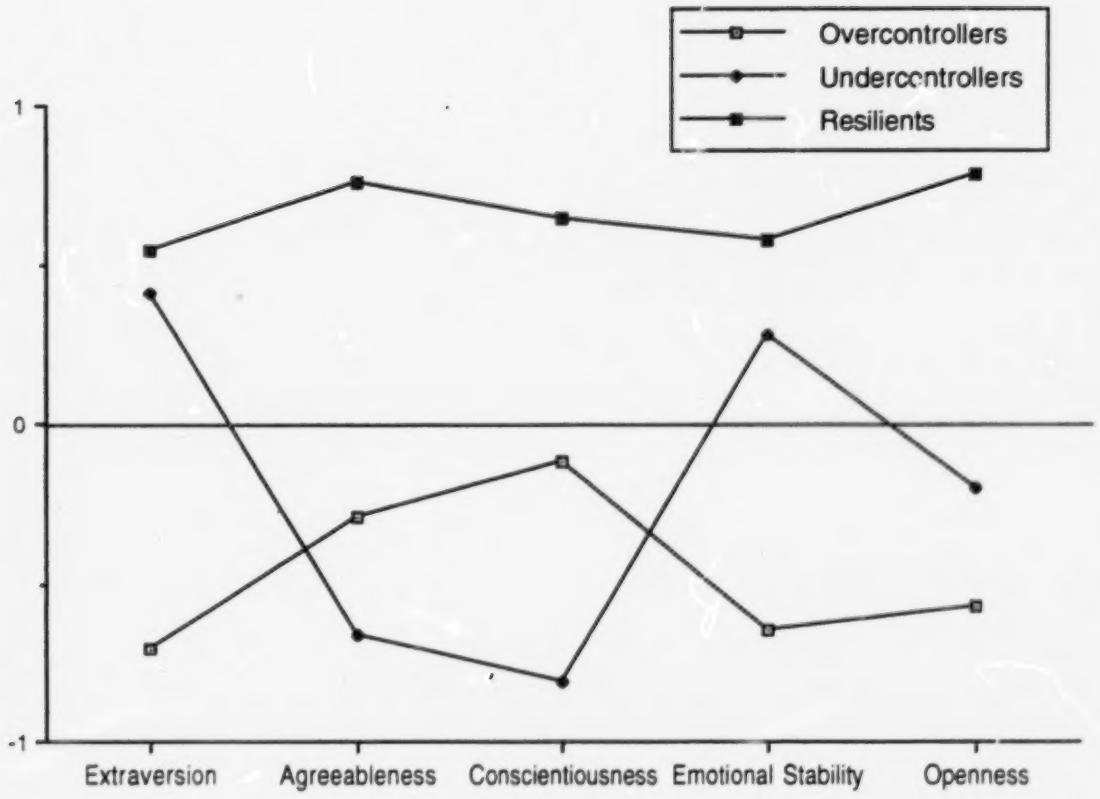
Overcontrollers
Undercontrollers
Resilients
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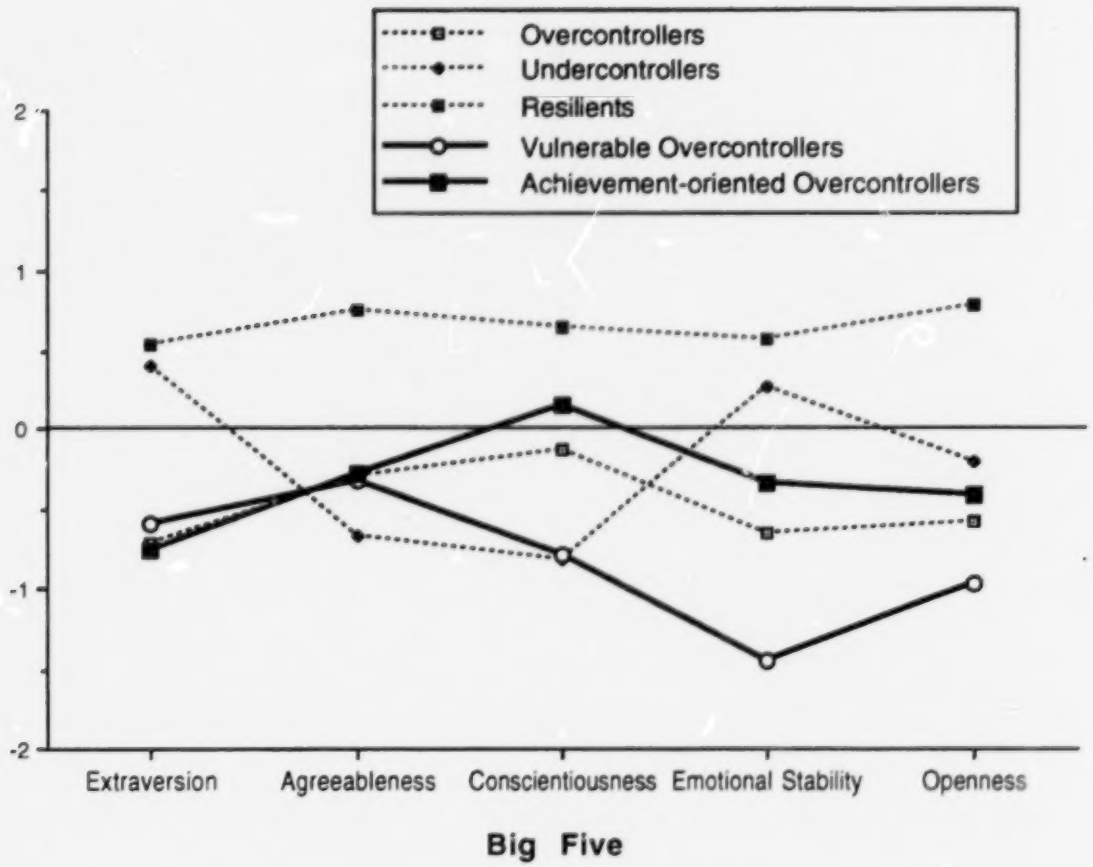
Extraversion
Agreeableness
Conscientiousness
Emotional Stability
Openness
Big Five

Figure 1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Undercontrollers
Resilients
Vulnerable Overcontrollers
Achievement-oriented Overcontrollers
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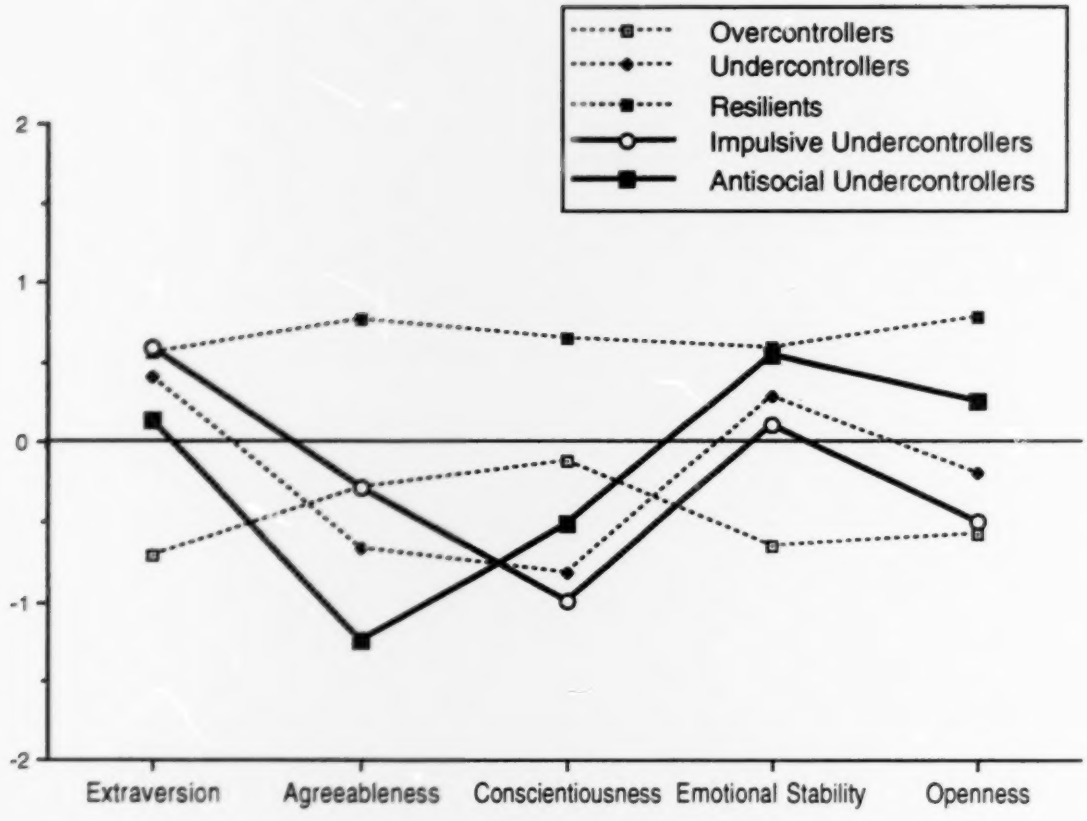
Extraversion
Agreeableness
Conscientiousness
Emotional Stability
Openness
Big Five

Figure 2


Overcontrollers
Undercontrollers
Resilients
Impulsive Undercontrollers
Antisocial Undercontrollers
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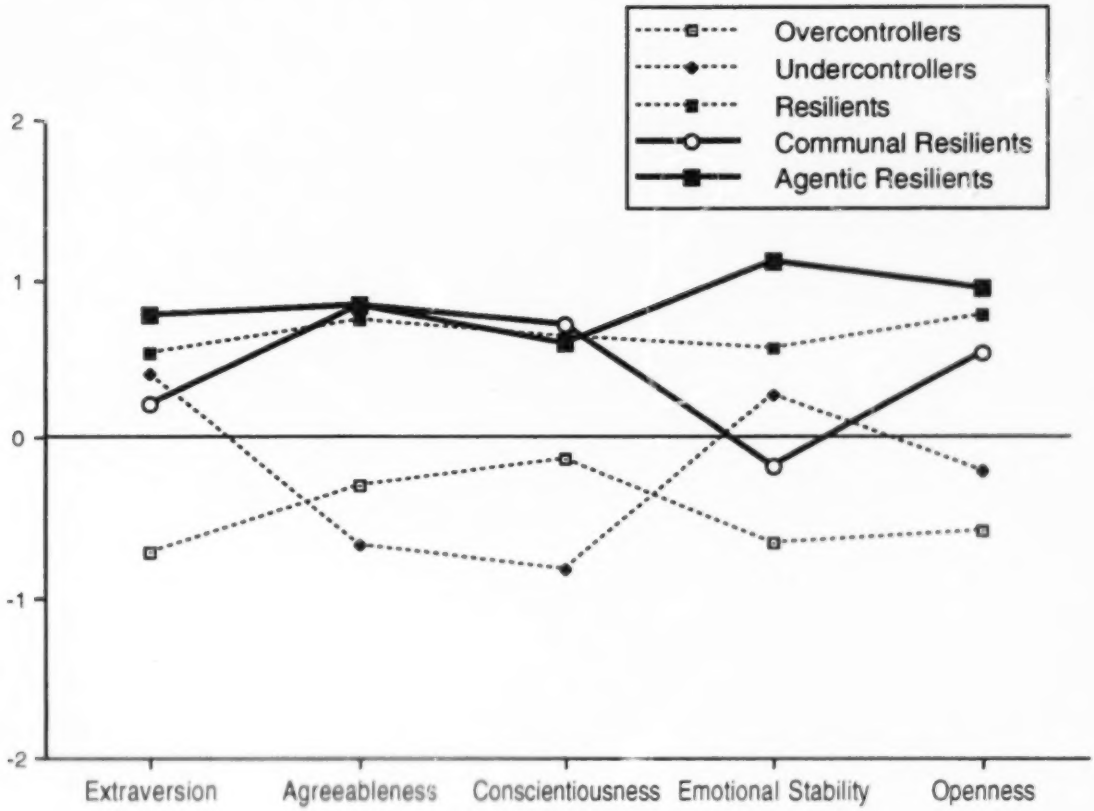
Extraversion
Agreeableness
Conscientiousness
Emotional Stability
Openness
Big Five

Figure 3


Overcontrollers
Undercontrollers
Resilients
Communal Resilients
Agentic Resilients
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Agreeableness
Conscientiousness
Emotional Stability
Openness
Big Five

Figure 4

Table 1

The Big-Five Intercorrelations (Spearman rank) of Three Personality Types in Two Studies (n = 5 personality dimensions)

	Van Lieshout et al. (1995)		
	Overcontrollers	Undercontrollers	Resilients
This Study			
Overcontrollers	*.90**	-.90*	.70
Undercontrollers	-.90*	*.90**	-.70
Resilients	.70	-.70	*.90**

Note:

Both studies differ on the following characteristics:

Characteristic	Van Lieshout et al. (1995)	This Study
Age Subjects	Elementary school	Adolescents
N	79	3284
Design	Longitudinal	Cross-sectional
# of Measurements	3 waves	1 wave
Clustering variables	3 * 5 Big-Five Dimensions	5 Big-Five Dimensions
Assessment Instrument	California Child Q-set	Big-Five ratings
Rater	Teacher report	Self-report

Table 2

The Big-Five Intercorrelations (Spearman rank) of Six Personality Subtypes in Two Studies (n = 5 personality dimensions)

	Van Lieshout et al. (1995)					
	Overcontrollers		Undercontrollers		Resilients	
	Vulnerable	Achiever	Impulsive	Antisocial	Communal	Agentic
This Study						
Overcontrollers						
Vulnerable	*.70*	.20	-.40	.10	-.50	.20
Achievement	.00	*.90**	-.80	-.70	-.80	.90*
Undercontrollers						
Impulsive	.60	-.90*	*.70*	1.00*	.20	-.90*
Antisocial	-.50	-.60	.70	*.30*	.70	-.60
Resilients						
Communal	.20	.80	-.90*	-.60	*-.60*	.80
Agentic	-.10	-.40	.20	.30	.30	*-.40*

Note: see Table 1

Table 3
Adjustment of Three Personality Types

	Over-controllers (52% girls)	Under-controllers (29% girls)	Resilients (41% girls)	F
Relational Support				
Parental Support	-.13[a]	-.19[a]	.30[b]	76.36***
Friend Support	-.20[a]	-.15[a]	.35[b]	93.83***
Converg. of Goals	-.04[a]	-.27[b]	.24[c]	62.32***
Sibling Support	-.16[a]	-.14[a]	.28[b]	59.53***
Resp. for Autonomy	-.19[a]	-.13[a]	.31[b]	86.85***
Well-being				
Self-esteem	-.24[a]	-.01[b]	.29[c]	82.60***
Loneliness	.18[a]	-.08[b]	-.16[b]	35.50***
Brooding	.18[a]	-.08[b]	-.15[b]	35.40***
Worrying about home	.05[a]	.04[ab]	-.07[b]	4.49*
Somatic complaints	.14[a]	-.01[b]	-.17[c]	26.31***
Delinquency				
Overt	-.17[a]	.29[b]	-.02[c]	44.81***
Covert	-.12[a]	.34[b]	-.09[a]	48.84***
Authority Conflict	-.07[a]	.33[b]	-.14[a]	47.52***
Substance Use				
Cigarettes	-.12[a]	.27[b]	-.05[a]	36.95***
Alcohol	-.19[a]	.33[b]	.01[a]	60.89***
Drugs	-.07[a]	.24[b]	-.06[a]	23.38***
Gambling	-.12[a]	.23[b]	-.01[a]	24.85***
Bullying				
Bullying others	-.20[a]	.49[b]	-.11[a]	118.20***
Victim direct bullying	.18[a]	-.02[b]	-.21[c]	42.57***
Victim indirect bullying	.28[a]	-.09[b]	-.28[c]	95.33***
Sociometric Status				
Peer Acceptance	-.10[a]	.06[b]	.15[b]	20.58***
Peer Rejection	-.03[a]	.10[b]	-.05[a]	6.14**
Peer Reputation				
Aggression-Inattentiveness	-.25[a]	.44[b]	-.03[c]	123.97***
Achievement-Withdrawal	.30[a]	-.42[b]	-.04[c]	134.25***
Selfconfidence	-.25[a]	.16[b]	.21[b]	80.77***
Sociability	-.16[a]	.09[b]	.16[b]	34.02***
Emot.-Nervousness	.17[a]	-.09[b]	-.14[b]	35.92***

*p<.05; **p<.01; ***p<.001

Table 4.
Adjustment of Vulnerable and Achievement-Oriented Overcontrollers

	Vulnerable n=388 (66% girls)	Achievement-Oriented n=968 (47% girls)	t
Relational Support			
Parental Support	-.39	-.02	-5.83***
Friend Support	-.32	-.16	-2.37*
Converg. of Goals	-.25	.04	-4.76***
Sibling Support	-.31	-.09	-3.27**
Resp. for Autonomy	-.43	-.09	-5.61***
Well-being			
Self-esteem	-.84	.00	12.14***
Loneliness	.54	.03	6.71***
Brooding	.58	.02	8.48***
Worrying about home	.32	-.06	5.61***
Somatic complaints	.67	-.07	10.86***
Delinquency			
Overt	-.08	-.20	2.62**
Covert	-.01	-.16	2.54*
Authority Conflict	.12	-.15	4.38***
Substance Use			
Cigarettes	.05	-.19	4.43***
Alcohol	-.19	-.20	.15
Drugs	.06	-.13	3.48**
Gambling	-.10	-.13	.55
Bullying			
Bullying others	-.16	-.21	1.13
Victim direct bullying	.42	.09	4.49***
Victim indirect bullying	.49	.20	4.00***
Sociometric Status			
Peer Acceptance	.00	-.15	2.42*
Peer Rejection	.04	-.06	1.57
Peer Reputation			
Aggression-Inattentiveness	-.13	-.30	3.06**
Achievement-Withdrawal	.08	.39	-4.95***
Selfconfidence	-.19	-.28	1.50
Sociability	-.01	-.21	3.40**
Emot.-Nervousness	.23	.15	1.26

*p<.05; **p<.01; ***p<.001

Table 5.
Adjustment of Impulsive and Antisocial Undercontrollers

	Impulsive n=456 (38% girls)	Antisocial n=294 (15% girls)	t
Relational Support			
Parental Support	-.10	-.34	3.14**
Friend Support	.02	-.42	5.47***
Converg. of Goals	-.20	-.39	2.55*
Sibling Support	.01	-.39	4.84***
Resp. for Autonomy	-.03	-.28	3.25**
Well-being			
Self-esteem	-.05	.06	1.44
Loneliness	-.15	.03	-2.59*
Brooding	-.02	-.18	-2.23*
Worrying about home	.10	-.06	2.02*
Somatic complaints	.09	-.18	3.58***
Delinquency			
Overt	.24	.36	-1.08
Covert	.30	.41	-.99
Authority Conflict	.34	.31	.43
Substance Use			
Cigarettes	.35	.15	2.06*
Alcohol	.31	.35	-.50
Drugs	.21	.28	-.71
Gambling	.20	.28	-.70
Bullying			
Bullying others	.40	.62	-2.29*
Victim direct bullying	-.12	.13	-3.44**
Victim indirect bullying	-.23	.14	-5.00***
Sociometric Status			
Peer Acceptance	.22	-.19	5.87***
Peer Rejection	-.03	.31	-4.57***
Peer Reputation			
Aggression-Inattentiveness	.39	.53	-1.73
Achievement-Withdrawal	-.51	-.28	-3.84***
Selfconfidence	.28	-.02	4.27***
Sociability	.21	-.09	4.07***
Emot.-Nervousness	-.16	.02	-2.45*

*p<.05; **p<.01; ***p<.001

Table 6.
Adjustment of Communal and Agentic Resilients

	Communal n=494 (60% girls)	Agentic n=684 (27% girls)	t
Relational Support			
Parental Support	.28	.31	-.66
Friend Support	.33	.36	-.41
Converg. of Goals	.37	.15	3.52***
Sibling Support	.25	.30	-.87
Resp. for Autonomy	.26	.35	-.53
Well-being			
Self-esteem	.20	.36	3.32**
Loneliness	-.16	-.16	.03
Brooding	.02	-.27	4.73***
Worrying about home	-.06	-.08	.23
Somatic complaints	-.07	-.24	2.95**
Delinquency			
Overt	-.23	.13	-5.95***
Covert	-.26	.02	-5.05***
Authority Conflict	-.22	-.08	-2.23*
Substance Use			
Cigarettes	-.18	.04	-3.62***
Alcohol	-.16	.14	-4.60***
Drugs	-.19	.03	-3.92***
Gambling	-.17	.11	-4.76***
Bullying			
Bullying others	-.29	.01	-5.21***
Victim direct bullying	-.18	-.23	.95
Victim indirect bullying	-.16	-.36	4.04***
Sociometric Status			
Peer Acceptance	.16	.14	.43
Peer Rejection	-.13	.00	-2.31*
Peer Reputation			
Aggression-Inattentiveness	-.27	.15	-7.34***
Achievement-Withdrawal	.14	-.17	5.43***
Selfconfidence	.14	.25	-1.90
Sociability	.21	.12	1.60
Emot.-Nervousness	-.06	-.21	2.65**

*p<.05; **p<.01; ***p<.001